



Colonial Parkway Reconstruction



Above: A typical view along the Colonial Parkway. (NPS Photo)

Project Description. The views along the Colonial Parkway continue to inspire, but the Parkway, built between 1931 and 1957, is rated “poor” for 87% of its 23 miles. The 50-year design life expired a generation ago for much of the Parkway. Major rehabilitation and reconstruction are essential to preserve this scenic and historic drive. The historic Parkway is an icon of the National Park Service (NPS) road network and a primary visitor experience linking major historic sites of the Colonial National Historical Park.

Project Background. Planned and designed during the 1930s, the Colonial Parkway embodies the characteristics of the modern parkway. Its curving alignments, limited access, pleasurable driving experience, and use of designed plantings and park-like features remain intact today. Designations include “All-American Road” (FHWA National Scenic Byway Program), a prestigious Centennial Medallion of the American Society of Landscape Architects as “one of the finest parkway archetypes in the country,” and a listing in the National Register of Historic Places.

Designers and landscape architects from NPS and the Bureau of Public Roads linked three historically significant sites (the Historic Triangle) of the early Colonial Period. The 23-mile Parkway

connects Historic Jamestown (the first English settlement in 1607), through Colonial Williamsburg, to the Yorktown Battlefields where Cornwallis surrendered to Washington in 1781, effectively ending the Revolutionary War.

Current Status. Built between 1931 and 1957, construction stopped and started due to problems with funding, land acquisition, routing around (and under) Williamsburg, World War II, and the Korean War. Construction projects have continued to the present, with minor construction and repair projects documented in each decade following the 1950s.

Today, the exposed aggregate concrete surface still reminds drivers of the dirt roads of a by-gone era. But the road, initially designed for leisure driving, is under constant assault. The Parkway has become an important local commuter route; the busiest sections carry 1.9 to 2.2 million vehicles per year. The Federal Highway Administration (FHWA) predicts a traffic increase of nearly 50% over the next 20 years. The Parkway is also a state-designated Hurricane Evacuation Route. Most significantly, tour buses pound the concrete with a size, weight, and frequency that no designer in the 1930s could have imagined.

The FHWA has rated 20 of the 23 miles as “poor” and the remainder as “fair,” based on a sophisticated inspection and scoring system. Settled and broken slabs, failed joints, severe

Mega-Project* Profile: COLO Parkway Reconstruction

Estimated cost: \$270M to \$300M (preliminary)

Percentage of Northeast Region (NER) FLTP Annual Allotment: 1370% to 1525%

Percentage of NPS FLTP Annual Allotment: 135% to 150%

* **Mega Projects:** The NPS transportation system is supported, in part, by funds from the Federal Lands Transportation Program (FLTP). Currently, the NPS is authorized an annual budget of \$268 million from the FLTP. These funds are apportioned by formula among the seven NPS Regions. Most of these funds are used for “transportation asset management” – that is, to pay for the work required to keep existing assets in good condition. There are some projects, such as a major bridge repair or ship replacement, that require a much larger amount of funding than is available on an annual basis to a Region. These we call “Mega Projects.” The NPS is pursuing strategies to fund these projects.



Photos illustrate problems along the length of the parkway

Above: Asphalt patches checkerboard the Parkway.

Middle bottom: Typical failed slab in high bus traffic area. Joint failure and slab cracking lead to water infiltration, pumping, and ultimate failure.

Right middle: Edge failure, patch failure, curb failure, joint sealant failure, cracked slab, slab settlement. High bus traffic area.

concrete spalling, and a checkerboard of asphalt patches adversely affect the structural integrity, the comfort of the ride, and the historic aesthetics of the Parkway.

Rehabilitation and Reconstruction Needs. The NPS and FHWA completed a study in 2014 that consolidated and reviewed previous studies, evaluated causes of pavement deterioration, and proposed a plan to save as much of the historic fabric as feasible. Major sections of the Parkway require complete reconstruction, including the heavily damaged section at Williamsburg Circle and the temporary asphalt section at Jamestown. Reconstructed sections require an additional base course and augmenting the subbase using geotechnical methods. Many of the sections in fair to good condition can be retained if drainage issues are quickly resolved and joints are sealed to protect the pavement from future damage.

Drainage improvements are an essential part of this mega-project. Over the past 80 years, commercial and residential development just outside the narrow Park buffer zones has adversely affected the Parkway. This growth has significantly increased not only traffic loads, but storm runoff as well. This has overloaded numerous existing drainage systems.

Surface drainage, drop inlets, and culverts require repair, replacement, or enlargement at many locations. Approximately 47% of culverts have performance problems and/or are undersized for the current conditions. Bridge abutments must be stabilized. Further, storm and tidal erosion threaten collapse of the Parkway in areas where it skirts along the York River shoreline.

Projected Cost and Phasing. The first priority is to complete critical preservation work in an effort to save as much of the



historic fabric as practical. This requires approximately \$2 million to reseal joints, and repair minor concrete cracks. The second priority is to upgrade drainage and correct performance problems in areas where the concrete slabs are still considered to be in good condition.

Major rehabilitation should start with Williamsburg Circle, where significant pavement damage and several critical drainage problems exist. This, coupled with some of the highest traffic loads from tour buses and commuters, could spread the pavement damage to surrounding areas, drastically increasing the cost over the next five years.

Phasing was developed using the philosophy of protecting pavement in good condition first and reconstructing the pavements in poor condition using a “worst-first” priority.



Off-the-shelf designs already proven at Colonial NHP have been recently reviewed and are ready for use. The nature of the work and the detailed information already available make the phasing adjustable to meet funds availability, unexpected changes in condition, and traffic control requirements.

This mega-project will preserve a failing historic Parkway and significant commuter route for the use and enjoyment by local residents and visitors from around the world.